

AMERICAN VETERINARY REVIEW,

OCTOBER, 1886.

EDITORIAL.

TWENTY-THIRD ANNIVERSARY MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION at the Rossmore Hotel—why held there—but few States present—usual absence of reports from the various committees—vote on the papers offered to compete for the Association and Review prizes—Dr. T. S. Butler, of Ohio, receives it—the offer of prizes to be continued, and greater competition looked for. **CONTAGIOUS PLEURO-PNEUMONIA**—the outbreak at Quebec—a letter to the *Breeders' Gazette*. **INOCULATION AGAINST ANTHRAX**—the Association's Committee on Diseases again recommends it—the *Breeders' Gazette* and other papers do the same—it is practised all over the world, then why not here. **VETERINARY OR AGRICULTURAL COLLEGES**—is veterinary education too complicated, and should it be left to agricultural colleges to make veterinarians—is the curriculum of veterinary colleges as at present arranged, likely to deter agricultural students from entering the ranks of the profession. **PASTEUR AND HIS WORK**, by George Fleming—an excellent companion for every veterinarian.

TWENTY-THIRD ANNUAL MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.—By special selection (?) of a committee of the Comitia Minora of the United States Veterinary Medical Association, the twenty-third anniversary was held on the 21st of September, at the Rossmore Hotel, in this city. Why this selection was made in preference to one of the numerous appropriate halls, where similar scientific bodies are accustomed to find accommodations, may seem to be a strange inquiry to make. Why a room was not engaged in the Academy of Medicine, the Mott Library building, or the Cooper Union building, or why the lecture rooms of one of the two veterinary colleges of this city were overlooked is not very clear to the minds of all the members.

But whatever may have been the true inwardness of the matter, the meeting was called at the Rossmore, and there the gathering took place. In any case it proved to be a fairly interesting meeting. Six States were represented, though unfortunately, either our friends in the west had failed to appoint delegates, or the delegates had failed to respond to their appointments; the true solution of which problem may also be difficult to solve. The meeting was very much like its last predecessor, the time being almost wholly occupied in discussing the business of the Association.

The report of the committees were, according to rule, "conspicuous by their absence," the only report offered taking the form of a series of short remarks by the chairman of the Committee on Diseases, relating to some of the contagious diseases now prevailing in this country, and were substantially interesting from their practical character and the facts they embodied. By request of the Association the report is printed in the present issue of the REVIEW.

The most interesting feature of the meeting was the proceedings attending the vote of the Association on the papers which had been printed for the prizes offered by the Association and the editor of the REVIEW. These papers have been printed in previous issues of this periodical, but as the committee on that subject (not to be out of the fashion) had failed to report, and as a number of the members present had not read the articles, they were again read by the Secretary, at the request of the meeting. They were accorded an attentive hearing, and by the general vote of the meeting, the author of the paper identified by the signature of "Incognitus," the paper printed in our July number, was adjudged to have earned the prize and the encomium. On opening the envelope which concealed the name of the successful candidate it was found to contain that of Dr. T. S. Butler, of Ohio. The announcement of the gentleman's name was heard with loud expressions of applause, though subsequently, a rather unpleasant surprise was experienced by a portion of the members when the fact was learned that the successful essayist was not an American but a Canadian graduate, nor a member of the Association. There was, however, no alternative—the situation must be accepted.

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We hope this event will serve as a stimulus to increase competition among those whose energies, it was hoped, would be specially stimulated by the institution of this offer of prizes for the best exhibition of scholarship. The prize of the Association will, we hope, be continue to be offered; that of the REVIEW is still subject to capture at the next September meeting.

CONTAGIOUS PLEURO-PNEUMONIA.—The remarks which the chairman of the Committee on Diseases submitted at the annual meeting of the National Association ought to have elicited from the Association some general discussion of the subject of the contagious diseases which prevail amongst our cattle, especially two of the number, viz: pleuro-pneumonia and anthrax. The recent outbreak at Quebec, and the rapid manner in which the Canadian authorities disposed of it, offers a sound example for our own officials in Washington. A letter headed "Red Tape," which we copy from the *Breeders' Gazette*, seems to show that according to the author, much deficiency of action has been exhibited by our veterinarians. Once more, we cannot suppress our regret that the red tape of administrative rules does not suffer veterinarians to be made acquainted with what most of us consider a duty due to the profession.

INOCULATION AGAINST ANTHRAX was also recommended in the report of the chairman of the same committee. Time and time again has the same recommendation been urged. The *Breeders' Gazette*, that most excellent paper, in one of its last issues has these remarks:

INOCULATION FOR ANTHRAX.—At the recent Edinburg meeting of the National Veterinary Association of Great Britain a paper was read prepared by Prof. McFadyean, of the Royal Veterinary College, and Dr. Woodhead, Pathologist to the Royal Infirmary, and the subject of micro-parasites of domestic animals, in which it was stated with reference to anthrax "that Pasteur has succeeded in preparing a vaccine by the employment of which the domestic ruminants are put in possession of a high degree of immunity against spontaneous or inoculated anthrax; that by no known method of attenuation can there be obtained a vaccine of absolutely uniform strength; that it is not possible to obtain a vaccine that is at once and equally applicable to all the different species of domestic animals, or even to all the different breeds of

the same species ; and that even in the most capable hands accidents capable of entailing serious results may happen in the preparation of vaccine or in its employment." Notwithstanding the intimation of "serious results" we believe the agricultural classes would gladly avail themselves of the opportunity of using vaccine as a preventative of anthrax if they could only obtain it.

These are good words, and while we regret that the *Gazette* should have failed to notice our numerous requests on that subject, we are glad to see it calling the attention of our agriculturists to a measure which has already effected so much on the continent and saved so many lives. Almost all parts of the world employ it and an article published in *Science* show to what great extent it is employed, even in India. That paper says :

PREVENTIVE VACCINATION IN INDIA.—Pasteur's system of vaccination for anthrax has been tried with triumphant success by the Indian government, acting on the advice of Mr. J. Mills, the inspector of cattle-disease for Madras. According to the official papers, ponies, donkeys, cows, bullocks, buffaloes, sheep and guinea-pigs have all been protected by vaccination from the consequences of inoculation with virus which proved fatal to unvaccinated animals. A vaccinated pony and a buffalo were sent to a village where there was an epidemic of anthrax ; and though they were herded with the diseased cattle, and grazed on the same pasture, they escaped the disease. In Burmah the elephants have been vaccinated with equal success. At first the "vaccine" was imported from France ; but the uncertainty of obtaining it pure and efficacious from any one but Pasteur himself has induced the Indian government to fit up a laboratory for the manufacture and dispensing of the fluid in Bengal ; and, if that is successful, other laboratories will be found in other centres. Mr. J. H. B. Hallen was sent, some time ago, to study in Pasteur's laboratory ; and the report recommends that all veterinary surgeons should go through such a course of instruction.

Yes, all veterinary surgeons should go through a course of instruction, or, at least, they should practice inoculation, for it is the only means to combat anthrax.

VETERINARY OR AGRICULTURAL COLLEGES.—If many of our scientific papers agree upon the necessity for improvement in veterinary education, there are however, some which yet believe that our veterinary colleges here are too serious, and that

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while "it is true that the best of veterinarians do not know any too much," * * * *

"veterinary practice ought to be reduced to the greatest simplicity," and all the long article which accompanies these two sentences comes to the conclusion that "no agricultural student ought ever to be satisfied to leave the agricultural college without instruction in veterinary practice." We fear the person who wrote these remarks overdid the object he had in view. Yes, we believe the agricultural student ought to have some knowledge of veterinary medicine and a perfect acquaintance with some of its branches, specially zootechny, but while we can accept some of his suggestions, we must also remind him that a little knowledge is often worse than none at all. No, veterinary education is not too complicated at present in any one of our colleges; on the contrary, the country is much in need of good, sound educated practitioners, of men who have good practical knowledge, and that is what our colleges give to their students. Many of them are graduates of agricultural colleges, who "do not hesitate to enter a veterinary course because it is so complicated, and the study of veterinary medicine seems to him like an effort to reduce a huge mountain." If there is a change that can be hoped for in veterinary education, it's a more complete curriculum and a longer period of studies. It is doubtful if as yet we are prepared for these changes in our young country.

PASTEUR AT HIS WORK.—We have received from Dr. G. Fleming his excellent pamphlet, *The Work of Pasteur, from an Agricultural and Veterinary Point of View*. It is a review of the many discoveries of the great French chemist, excellently gathered together, and written with that easy style which has rendered Fleming's writings the companions of all veterinary readers. Every member of the profession will be pleased, interested and instructed in reading Pasteur and his Work.

HYDROPHOBIA is said not to exist in Lapland; but two dogs brought from that country, having been inoculated by M. Pasteur, contracted rabies, thus proving that Lapland dogs are not refractory to the disease.—*Medical Record*.

ORIGINAL ARTICLES.

CASTRATION OF CRYPTORCHIDS.

BY M. JACOULET.

ANATOMY OF THE INGUINAL AND TESTICULAR REGIONS.

1. INGUINAL REGION. By this designation we intend to indicate the fold or hollow extending obliquely downward and inward from the external angle of the ilium to the anterior border of the pubis, separating the inferior abdominal wall from the internal face of the thigh.

In tracing this region from the superficial portions to the more deeply seated layers, we successively reach:

First. The scrotum, which is a thin, flexible and elastic skin, sparsely covered with fine hairs.

Second. A fibrous, elastic membrane, closely connected with the scrotum, and known as the dartos.

Third. A layer of cellular tissue, of a more or less dense consistency, in the meshes of which and near the median line, the external pudic veins appear.

Fourth. An oval opening, through and circumscribed by the fibres of the aponeurosis of the great oblique muscle. This opening is easily felt through the skin and is known by anatomists as the external inguinal ring.

Fifth. And lastly, we have a muscular aponeurotic space, formed by the small oblique muscle against the crural ring. This space, which must occupy our special attention, corresponds with the inguinal canal of the anatomists. In well and normally formed stallions the vaginal sheath forms for it an internal lining, which transforms it into a true canal, tubulated in shape, and in which the testicular cord passes. But in horses in which the testicle has not passed outside of the abdomen, and in mares, there is, strictly speaking, no canal, and the region offers instead only a kind of slit or interstice, filled with a loose connective tissue which closes it entirely and leaves the inguinal blood vessels and nerves at its internal border.

It is this that Mr. Degive has called the *inguinal interstice* or

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tract. The external inguinal ring is its entrance, while further on, it ends at the abdominal cavity, to be there closed by the peritoneum.

To resume then, we have: the skin and the dartos; a layer of cellular tissue; the external inguinal ring, whose internal or prepubic commissure may be readily observed, and the inguinal interstice, space or tract, whose entrance is indicated by the external ring. Such are the different parts that form the inguinal region in cryptorchids.

The *inguinal interstice* or *tract*, situated between the small oblique muscle, which forms its inferior, and the crural aponeurosis, which forms its superior wall, results from the resting of these organs upon each other in the internal three quarters of their transverse diameter. Indeed, the reflex portion of the aponeurosis of the great oblique which forms the crural arch is a large band attached by one of its extremities to the external angle of the ilium, and by the other to the anterior border of the pubis in common with the prepubic tendon.

The small oblique or ilio-abdominal muscle, composed of a fleshy and an aponeurotic portion, is flabelliform. Its fleshy fibres, spreading like the limbs of a fan, radiate from the external angle of the ilium, the posteriors extending backward and inward, the centrals downward and the anteriors forward. The posteriors are inserted upon the external quarter of the crural arch. From that point and as far as the prepubic tendon, they run in front of the arch, simply lying in contact with it, curve between them and this aponeurosis, upon a space represented by the three internal quarters of the extent of this aponeurosis, a space filled with cellular tissue, constituting the *inguinal interstice* or *tract*.

It is an infundibulum, entirely flattened, assuming an oblique direction downward, backward and inward. It offers two faces or walls, one anterior and one posterior; two angles or commissures; one inferior opening or entrance, and one superior or bottom, closed by the peritoneum.

The posterior wall, also slightly external, formed by the crural arch, is strong and resisting. The anterior wall, also slightly

internal, formed by the fleshy portion of the small oblique muscle, is very mobile. Easily yielding and spreading, it readily permits the dilatation and consequent increase in size of the tract.

The internal angle or commissure is limited by the prepubic tendon at its insertion to the pubis.

The external is formed by the insertion of the fleshy fibres of the small oblique upon the crural arch on the external quarter of this aponeurosis.

The inferior opening, which is exposed by the incision of the scrotum and dartos, and by the laceration of the cellular tissue beneath, is nothing else than the external inguinal ring. Pierced through the aponeurosis of the great oblique, whose fibres separate in front, to circumscribe its oval shape, this orifice is principally well defined on its posterior border or pillar, which is formed by the crural arch, and at the internal commissure, which is indicated by the prepubic tendon. The other portions of its circumference are not well defined on account of the degeneration of the aponeurotic fibres into cellular tissue. It is on this account that the entrance to the inguinal tract becomes so very dilatable and so easily susceptible of enlargement.

The superior orifice, or bottom of the inguinal space, is a kind of slit, opening between the superior borders of both walls and closed by the peritoneum which rests against its borders. It is filled with subperitoneal cellular tissue which is continuous with that of the interstice. This slit extends from the insertion of the prepubic tendon to the external quarter of the crural arch, with a length of 15 to 18 centimeters about, and following an oblique direction outward and upward.

At the internal angle of the interstice, the bottom is separated from the entrance or external inguinal ring only by the thickness of the prepubic tendon. But at the external angle the distance separating the inferior from the superior opening is much greater. It appears evident from this that the inguinal tract increases in depth from its internal to its external angle. Towards the former, where the inguinal canal is naturally formed in the normal, entire horse, as well as in those affected only with

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cryptorchidy, the depth is only from 5 to 6 centimeters, while, increasing from inward, outwardly, on account of the obliquity upward which has been acquired by the bottom, it easily measures 10 and 12 centimeters at the external angle. This is a peculiarity worth noticing, since from this fact arises one of the most important of the indications of the operating steps, viz., the perforation of the inguinal interstice. The indication is this:

The external inguinal ring forming the entrance to the inguinal interstice having been exposed by the division of the scrotum and dartos, and by the laceration of the conjunctive tissue beneath, the hand is carried upon this ring, whose internal commissure and posterior pillar are easily found. Introduced into the ring it is then pushed into the interstice, outward and upward toward the flank, in order to pass by the side of the external angle of this interstice without breaking the small resistance it offers.

By this mode a part much nearer the sub lumbar region is reached than could be otherwise without going beyond the external quarter of the crural arch than when the hand is further from the internal angle or prepubic tendons.

Numerous post mortem examinations of pseudo operations made upon dead animals have shown that the hand pushing forward the fleshy portion of the small oblique muscle and lacerating the cellular tissue of the inguinal tract, reaches the peritoneum to lacerate it at about 18 centimeters from the linea alba, or more commonly from 12 to 15 centimeters.

The hand then drawn, the fleshy portion of the small oblique retreats upon itself, comes to lie against the crural arch, and closes the interstice. Again, when the animal is in a standing posture, the opening of the peritoneum being in a portion of the abdominal wall, the intestines have no tendency to engage into it; a double result which will in a majority of cases prevent peritonitis and hernia. And again, through this peritoneal laceration, it will always be an easy task to bring the testicle out of the abdomen in order to remove it.

If, on the contrary, the bottom of the interstice has been lacerated near the median line, the artificial peritoneal opening

would in this condition render hernia certain. And again, if the suspensory cord should be too short it might be impossible to bring the organ out of the abdomen to amputate it.

2. DISPOSITION OF THE TESTICLES.—A. *Abdominal Cryptorchidy*.—While the testicles remain in the abdomen, they are suspended to quite a large peritoneal frænum, starting from the lumbar region, and composed of two layers, between which run the blood vessels and efferent canal. According to the length of this frænum the organs are floating at various heights immediately in front of the pelvis, at times against the anterior border of the pubis, and again lower, on the inferior abdominal wall, and again above it. It is at the entrance of the pelvis against the anterior border of the pubis, or a little above, and more outwardly in the direction of the flank, that they are ordinarily situated.

They are small, soft, flabby, without vaginal covering, and have only a thin tunica albuginea, which allows the projecting of the numerous sinuosities of the venous blood-vessels which run on their surface, and give them a very peculiar ruguous aspect. Their size may vary from that of a pigeon's egg, or of a walnut, or that a hen's egg; seldom larger.

The epididymis annexed to it is greatly elongated, and is separated from the testicle; the globus minor or posterior extremity, often constituting a soft, oblong and very moveable mass, which hangs lower than the principal organ and is readily detected with the hand. We have seen in cryptorchid animals, an abdominal testicle reduced to the size of a very small nut, but with a very well developed epididymis, the globus minor of which was hanging as far down as the inferior inguinal ring, where it could be felt through the scrotum, while the testicle was in the abdomen.

In some cases of incomplete abdominal criptorchidy, there is a rudiment of vaginal sheath measuring from one to three centimeters in depth. Its cavity is thus occupied by the testicle; or by the epididymis, the testicle floating above it; and some times according to Degive, only by a portion of the gubernaculum testis.

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beginning of the migration of the testicular apparatus. Ordinarily, the testicle has entered the inguinal interstice, pushing the peritoneum before itself; which thus forms its vaginal sheath, and carrying the epididymis and efferent canal. Some cause has interfered with its entire descent and it has stopped before reaching the external inguinal ring, or partly engaged in it, more seldom after going beyond it. In some cases, the epididymis and the efferent canal alone have come down in the vaginal sheath, while the testicle has been retained higher up in the interstice, or even in the abdomen.

The testicles which are in the inguinal canal, exceptionally larger than those remaining in the abdomen, are generally, like those, small and soft. They are always surrounded by a vaginal sheath which becomes more and more nearly complete according to the degree of their descent.

They may be felt by scrotal examination, whether the animal is on his feet or lying down. But, in many cases, it is impossible to feel them. However, so long as there is a beginning of migration, after dividing the scrotum and dartos, and introducing the hand in the opening formed by the external inguinal ring, the fingers will always be able to secure the testicle or the epididymis, whether one or the other is engaged in the inguinal canal. Indeed, migration takes place toward the internal angle of the interstice, that is, when its depth is not more than from 5 to 7 centimeters, and the atrophied testicle or its epididymis is no more than 3 or 4 centimeters in diameter. When the testicles have passed the external inguinal ring, without being visible externally, they are as large and firm as the normal testicles hanging in the envelopes, and then, there is really no cryptorchid.

GENERAL CONSIDERATIONS RELATIVE TO THE INDICATIONS OF THE OPERATION AND ITS CHANCES OF SUCCESS—PRECAUTIONS TO BE TAKEN.
—PREPARATION OF THE SUBJECT.

Before beginning the castration of a cryptorchid horse, it is indispensable to ascertain the seat of the abnornity (if right, left or double) and as much as possible its form, whether abdominal or inguinal.

The form is at times very hard to positively make out, and it may be difficult to say whether it is abdominal or inguinal. At any rate while it is better to make it out if possible, it is not indispensable, as in both cases the first stage of the operation (incision of the scrotum and dartos, with laceration of the cellular tissue underneath) are the same, and when they are completed, the position of the organ is then very easily ascertained.

Unless the case requires it, it is prudent to wait until the cryptorchid has reached his third year before operating; earlier than that age it is to be feared than the introduction of the hand in the inguinal tract may be dangerous on account of the incomplete development of the parts. And again, sooner than that one would lose the possible advantage of a later spontaneous descent of the organ. After adult age, animals can be operated upon without inconvenience, even at an advanced age.

The influence of the season of the year is neither more nor less an indifferent consideration than in any other equally serious operation of the same nature. Spring and fall are the best time to do it. Of course, the animal should be in good health and properly prepared.

This preparation consists in a relaxing mode of feeding for six or eight days in order to empty the digestive canal as completely as possible, and avoid the danger of a too severe febrile reaction.

Mr. Degive suggests a daily administration for eight days of one ounce of tinct. of arnica, in a single dose in the morning in about a pint of cold water. To this he attributes the frequent and often complete absence of fever after the surgical manipulations.

Like Mr. Degive, the author, before his first operations, employed tinct. of arnica, but since abandoning its use he has obtained equally good results.

The animal with an empty stomach is thrown down, in preference, on the side opposite to that on which the cryptorchidy exists, and the corresponding posterior leg is fixed as for ordinary castration. The patient must be in the dorsal position as

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much as possible, and must be secured in the safest manner practicable.

The washing of the sheath is a good measure. Anæsthesia ought to be employed, as much to relieve the patient from pain as to facilitate the manipulations of the surgeon.

If the kind of cryptorchidism has not been detected while the animal was standing, it often becomes easier to do so when he is down and well secured. The instruments necessary are: Scissors, convex bistoury, forceps, tenaculum, clamps, ligatures or ecraseur, as the case may be. Oakum, needles and quill sutures ought to be always ready.

OPERATION.

Method by the perforation of the inguinal interstice.—This is divided into two parts. The first, which is the same in both kinds of cryptorchidism, has for its object to expose the external inguinal ring, and to allow the surgeon to discover whether the testicle has descended to the groin, or if it still remains in the abdomen. The second contemplates the prehension and ablation of the testicle; the means for effecting these objects vary considerably in the two kinds of castration.

FIRST PART.

This includes two steps. *First*, Incision of the scrotum and the dartos, and *secondly*, the laceration of the sub-dartois layers.

A.—*Incision of the scrotum and dartos.*—At a point corresponding exactly to the scrotal cul de sac, the operator makes a transversal fold of the skin, which is raised and stretched, and cut through with the scalpel perpendicularly, dividing at once the scrotum and the dartos. The incision is longitudinal, measuring about 15 centimeters in length, and is made a little more forward than backward. If the division of the dartos has not been made by the first stroke of the knife, it is carefully enlarged, avoiding the large divisions of the external pudic veins, which run immediately under the skin, close to the median line.

B.—*Laceration of the Sub-Dartois Tissue.*—The cellular meshes under the dartos, more abundant and condensed in cryptorchid animals than the others, cover the inguinal ring. They

must be carefully separated in order to expose this ring entirely, or to expose the vaginal sheath, as in the rare cases of inguinal cryptorchidism in which the testicles have come down to the lower part of the interstice. To do this, while an assistant separates the edges of the scrotal wound, the operator lacerates the layers underneath with his fingers, guiding himself by the internal commissure of the inguinal ring; that is to say, the point of insertion of the prepubic tendon, to the anterior border of the pubis, or by the testicle, when it is felt under the cellular tissue.

Bands resisting to the fingers are divided with the scissors; the use of the bistoury being contra-indicated on account of the blood vessels.

SECOND PART.

This differs in abdominal and inguinal cryptorchidism.

1ST.—INGUINAL CRYPTORCHIDISM.

Comprising two steps:—Prehension and ablation of the testicle.

A.—*Prehension*.—Two conditions may here present themselves. Either the testicle may be down on a level with the external inguinal ring, or it may be concealed higher up in the inguinal canal, or it may have remained in the abdomen, while only a portion of the epididymis is down in the groin. In the first case, the laceration of the layers of sub-dartoid cellular tissue has exposed the organ; and then an easy isolation finishes the operation. Or, in the second case, the external inguinal canal having been well dissected by the laceration of the cellular tissue meshes, two or three fingers are introduced in it, and soon the organ is felt. The testicle and epididymis are then drawn out by careful pulling until they are out of the external ring of the canal.

Bearing in mind the anatomical peculiarities already referred to, it will be easily understood that if the testicle is engaged in the interstice, the fingers will readily recognize it through the external ring. But it may happen that it is situated so high up that the fingers are too short to reach it; in this case the vaginal sheath being carefully raised with the forceps or a sharp tenaculum and opened, the testicle will at once descend until it can be easily reached and secured.

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B.—*Ablation of the testicle.*—This can be effected by means similar to those used in ordinary castration, but we will not examine their comparative value until we enter upon the subject of abdominal cryptorchidy.

We have always used Chassaignac's ecraseur, which we have used for both the covered and the uncovered operation. In the covered operation the chain is applied directly on the vaginal sheath covering the cord. In the uncovered operation, the sheath is first opened sufficiently to allow the full exit of the testicle. Both processes are equally good, with the exception that the second is alone applicable when the testicle is situated so high up in the canal that it cannot be brought out covered with its peritoneal envelope.

The organ being removed, the animal is allowed to get up and is placed under the same care and treatment which are employed in the case of the horse castrated in the normal way. Hemorrhage is not to be feared since, if it takes place, the tampon held in place by sutures will soon overcome it.

(*To be continued.*)

REPORT OF THE COMMITTEE ON DISEASES OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.

PROF. A. LIAUTARD, *Chairman.*

Mr. President and Gentlemen:

In the form of a very concise pamphlet, prepared by our excellent Secretary, we have been favored with a list of officers and a catalogue of the membership of the United States Veterinary Medical Association, and we have received the information that, omitting from the count those who have been elected to the honorary class, the total membership of this national representative of the veterinary profession in the United States is comprehended in the modest figures of *one hundred and thirty-four*. This statement reveals the fact that of the entire number of veterinarians in the country but one out of every eight of our professional

comrades has so far found his way clear to enter into organized association with this body of his colaborers.

Included in the pamphlet are the names and addresses of the nineteen State Secretaries who have been nominated by our President with the authorization of the Association.

The pamphlet includes a complete list of the various committees of the Association, with their membership, from which we learn that five members compose our Committee on Diseases, quite well distributed throughout the land, in respect to the matter of residence. With committees so numerically strong in membership, and the aid of this list of State Secretaries, and especially with so complete and efficient a Committee on Diseases, you will necessarily anticipate on this anniversary meeting of our Association, (the *twenty-third*, I believe) a report from me as chairman of this committee, which should be complete and satisfactory. But the result of such an anticipation can be none other than disappointment, when you come to realize the meagerness of the information I must be content to lay before you.

It is but a few weeks, I believe, since the distribution of this pamphlet of our Secretary was accomplished, and it is hardly probable, therefore, in respect to those who were most interested in knowing the positions which had been assigned to them, to make the proper and necessary preparation by obtaining in due season the information from others, or acquiring it for themselves, which must constitute the material for such reports as it is proper to lay before such a body as this. However this may be, and whether different results would have followed any other condition of things, we do not venture to say.

The chairman of the Committee on Diseases had four gentlemen with whom to co-operate, and to whom he could and did apply for aid. There were also nineteen State Secretaries, and the one hundred and thirty-four members of the Association upon which they (the five) could call in an appeal for interesting information and scientific facts and suggestions. These were all subject to our appeal; we could ask each and all of them to contribute to the common stock of veterinarian experience and science. I have done what I could, and here is the result in a communication

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from one member of the committee. It is quite concise, and reads as follows:

Dear Doctor:

"Yours at hand; I gave you the only printed matter we have in relation to contagious diseases, but at present glanders is quite prevalent here in the eastern part of the State, and so far as my knowledge goes the only disease excepting tuberculosis that we have to any extent."

This is very little for a report, but with your permission, I think we can probably use it as a text, or stepping stone, for some remarks which in any case would be becoming in your Committee on Diseases; and so long as we are deprived of the pleasure of reporting any new and interesting cases of inflammatory, sporadic, or surgical diseases that may have occurred in the practice of our friends through the country, I will improve the opportunity to call your attention to a few contagious affections which are prevailing in the United States, and which at all times deserve the attention of all veterinarians. The diseases upon which I desire to make a few remarks are contagious pleuro-pneumonia, tuberculosis, anthrax, glanders, hog cholera and rabies. It is not my intention in these remarks to refer especially to the symptoms, lesions, or treatment of these diseases. They are all familiar topics to you. I shall consider, merely, some few special points connected with these, and such as are of *actual* interest to practical men. *Contagious pleuro-pneumonia* has been a very interesting subject for the past few years, and the last scene is no doubt watched as attentively as the first which appeared some years ago. The last striking fact relating to this disease is the attempt which is now in progress to stamp it out of the country. Laws have been passed, money has been appropriated, and the Commissioner of Agriculture has advised the Bureau of Animal Industry to proceed with the work. The inspection, quarantine, and compensation for the animals which have been destroyed, as well as disinfection, are the measures which are strictly laid down in the rules and regulations issued from Washington, and all will no doubt meet with general approval. Even inoculation has found recognition at the hands of the Chief of the

Bureau of Animal Industry, and is now allowed under special excellent rules, which still, however, have a slight odor of the former dislike of this official to that measure. It is important to know, however, that the work, as carried out at present, consists only in killing the diseased animals. It is not necessary for us to say how we regret that half-way measure, and our fears that this attempt will not be even as successful as that of General Patrick's commission. But that is the law!!!

If contagious pleuro-pneumonia is attracting, as it indeed deserves, the attention of our official veterinarians, we must not ignore the fact that there is another disease amongst our cattle which is prevailing also quite extensively, but to what extent is yet unknown. I refer to tuberculosis. It is reported from almost every State, and is a great deal more serious and dangerous an affection than pleuro-pneumonia, at least from some points of view, and on that account we cannot very well afford to ignore its presence in our herds.

The experience of the outbreaks in Maine some time ago, in New York recently, and in New Jersey and elsewhere, which were brought under the keen observation of our friends Bailey, Coates, Michener and others, and which have proved so costly to the owners of the diseased animals, may be but the forerunners of others more serious, which might by their extent endanger considerably several branches of our dairy trade. It is a cause of great regret that through the organization of this Association as it is, more information of the existence of tuberculosis has not been obtained for this occasion.

ANTHRAX in its various forms, idiopathic and symptomatic, has again, as it generally does, made its appearance in various States, and for the last few months reports of isolated outbreaks are coming to us from Arkansas to New York. Indeed, there is information from the former that the disease "is decimating herds rapidly, and that it is extensively spreading."

Is it not time once for all for veterinarians on this side of the water to make up their minds to apply to these forms of disease that form of treatment that is the only proper one in all contagious diseases, and that is prophylactic treatment? Is it not time

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for us to accept and put in practice the vaccination which is now recognized all over the world as the proper treatment? We can allow one animal out of a herd to die with anthrax fever, black leg, or glossanthrax, but we ought not to allow the recurrence of the same when we have at our disposal the vaccine of Chauveau and Cornevin, without saying anything of that of Pasteur's. This vaccination is not a thing of which the people of this country are ignorant, nor do they seem to object to it. On the contrary, a communication from Illinois states that "many farmers and ranchmen are vaccinating their calves against black leg," though the vaccine matter is rather peculiar, being made of sulphur, assafœtida and turpentine, which is placed under the skin. This attempt with the inquiry made, "Is there anything better that can be used?" shows that the introduction of vaccination against anthrax could readily be made in districts infected with that disease.

GLANDERS.—It is unnecessary to say that glanders exists throughout the country or that all the agricultural papers have weekly or monthly reports of the outbreaks. Here it is one that has been allowed to spread "in spite of the efforts of the health authorities," while in another State it is the report that a "glandered horse has been abandoned on the road and been allowed to communicate his disease until he has succumbed to it."

Mr. President, our Association, it seems to me, has a duty to perform in connection with the existence of this disease. How is it to be discharged? What is the true nature of this duty I am scarcely prepared to say. It ought to be defined, discussed and decided by us and the conclusion arrived at brought to the attention of the proper authorities. There are, I believe, in connection with this disease, two important facts which might form the basis of our inquiries. The first is the importance of a proper *declaration*, a measure which we all certainly appreciate and approve, but which again is often ignored. The second is the deficiency which exists in the law concerning glanders in some of the States. While Illinois is provided with well regulated and we believe well enforced laws, Connecticut has none. While in the former the recognition of the disease by one veterinarian (ap-

pointed by the State authorities) means death, in Connecticut the diagnosis made by one, or even by several, but denied by another veterinarian, will bestow on the infected animal a lease of its life and liberty, by which he can spread his disease with impunity, and quite indefinitely.

HOG CHOLERA.—In this, the old history repeats itself. Large outbreaks, great mortality, enormous loss of money and comparatively, no way to fight against it; the old story over again. For a long time I have been advocating the introduction into this country of the prophylaxy adopted in Europe, viz: inoculation. Fairly tested experiments by Drs. Salmon, Billings, Gerth and myself, have however, proved that what I expected from that treatment was not realized here. Pasteur vaccine matter is of no effect in our hog cholera, and this is due to the simple fact that our swine scourge is a different malady from the disease known as such on the continent. The recent investigations of the Bureau of Animal Industry, and principally of Dr. Salmon, have proved this interesting fact. But we believe that it yet remains to be shown whether it is similiar to another contagious disease of swine, that which prevails in Germany, or if it is a special affection, of American origin.

RABIES has so largely occupied the attention of the world this year, and so many cases of that disease, either real or fantastic and illusory, have been recorded, that it would scarcely be proper to close these remarks without a few words on the subject.

"Pasteurization," the new word adopted for the preventive treatment of rabies, may never enter into veterinary practice, though if vaccine matter were readily obtainable the treatment would undoubtedly be the one indicated for an animal, horse, cattle or dog, or any other, in fact, that might have been bitten by a well confirmed rabid animal. But if this pasteurization is not likely to enter into our arsenal, there is a fact, resulting from the labors of Pasteur, that we must not ignore, and that is the cerebral inoculation upon a healthy animal with a portion of medulla taken from suspected animals—a simple operation which is the most scientific and only means of diagnosis in doubtful rabid cases. I need not say that careful readings

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of all the experiments of Pasteur on the subject will readily convince you that the conclusions arrived at by him are positively correct, and you can easily confirm them yourselves with a little attention and careful manipulation. The regular manner in which the symptoms make their appearance, the regular duration of time which they will require to run their course and bring on the fatal termination, all of which have been made over and over again in thousands of cases, in almost every part of the globe; all of these testify to the great value of the operation as a means of diagnosis in the hands of the veterinarian.

In these remarks I have several times spoken of Pasteur and his modes of vaccination in various diseases. In this, I may be accused, as indeed I have already been, of acting from a motive of national partiality and prejudice in favor of a fellow countryman. I am willing to accept the accusation, and while I shall be proud of the charge, it seems to me that I shall not any the less have done my duty towards this country if I succeed in introducing pasteurization and its humanitarian benefits to the fullest extent of their practical value.

AMERICAN VETERINARY COLLEGE.

HOSPITAL RECORDS.

CARIES AND REMOVAL OF THE THIRD UPPER MOLAR TOOTH—SUPPURATION IN THE NASAL TURBINATED BONE—TREPANATION—RECOVERY.

BY JAMES A. WALRATH, D.V.S., House Surgeon.

On the 19th of August a brown gelding was admitted to the hospital with the following history: Toward the latter end of April the owner's attention was called to a slight discharge taking place from the right nostril, of a whitish character, which was observed to be more abundant when the head was depressed. Thinking it to be nothing more than a simple nasal catarrh he concluded that no treatment was necessary, and kept the animal at work, supposing that the discharge would cease spontaneously.

After a delay of some weeks without any perceptible change he, by the advice of friends, sent the horse to the country for a

run at grass. Here he remained, as the owner supposed doing well, until word was received from the pasture owner, announcing that the services of two practitioners had been called to see the animal, and that there was a question in dispute between them, as to the nature of the disease with which the animal was suffering. One maintained that he was affected with glanders and ought to be destroyed, while the other one contended it was not, and that the discharge was due to other causes which were not in the least contagious.

Immediately following this the horse was sent back to the city, and a short time after his arrival was brought to the hospital for examination.

At this time, the discharge was not very abundant, being flaky in character and having a peculiarly bad odor. A large swelling was visible on the right side of the face, involving the nasal bone, especially in its superior portion, percussion dullness was well marked not alone over the swelling, but over nearly the whole extent of that bone.

The animal roared when moved, respiration not being performed without considerable difficulty. Examination of the nasal cavity with a reflector showed the mucous membrane to be of a leaden color, and the turbinated bone to be enlarged and quite prominent, even at the inferior extremity, which was readily noticed by lifting up the wing of the nostril. Placing the hand in the mouth of the same side, the third molar tooth of the upper jaw was found to be decayed and the cavity partially filled with undigested food.

After proper preparation of the animal by dieting, he was thrown down, and while under the influence of chloral, the diseased tooth was extracted, by removal in two pieces. The bulging nasal bone was then trephined, and about two ounces of cheesy pus taken from the sinus of the turbinated bone with a spoon probe. He was then allowed to get up and the sinus thoroughly cleansed with lukewarm water, from a small pipe which was inserted through the opening made by the trephine, the water that entered being allowed to escape through the nostrils, carrying with it small pieces of detached pus.

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This treatment was kept up twice daily until scarcely any discharge was noticed, after which the irrigations were not as frequent, taking place but once a day, and later on still rarer, the opening in the meantime being kept open with a short firm tent of oakum, and the granulations around the edge cauterized frequently with nitrate of silver.

After the discharge had ceased the oakum was removed from the opening and the edges allowed to unite, union taking place very rapidly.

The tooth cavity was kept as clean as possible after the extraction, by washing out with water the foreign matters that daily collected. The function of respiration which had been mechanically interfered with, was, after the operation, performed with ease, and at the end of the fourth week he was discharged. He has been seen since several times and found in perfect condition, doing his daily work.

COMPOUND COMMINUTED FRACTURE OF THE FORE ARM IN AN ELEPHANT.

BY THE SAME.

While acrobatic feats may be performed with impunity by man, all will acknowledge that when tight-rope walking is attempted by an animal of such size as the elephant even the balancing pole is scarcely sufficient to insure perfect equilibrium.

A young trick elephant about seven years of age, and weighing somewhat over two thousand pounds, which had been on exhibiton for some time in Tarrytown as a tight-rope walker, was noticed after one of his daily performances to be somewhat lame in the near fore leg. Suspecting that he had strained himself by a false step the managers concluded that if not very profitable, it might be wise to cease the training to which he was subjected, and give the animal a few weeks rest. But contrary to their expectations, after resting a few days he began to grow worse, and was found one morning by his keeper with his leg swollen and hanging powerless. On attempting to move him the leg bent backwards and refused to support even the slightest amount of weight. Dr. Liautard was now summoned by telegraph, and upon examination found the

animal to be suffering with a compound and comminuted fracture of the fore arm, both bones being broken. An unfavorable prognosis was given. He was, however, by the consent of Mr. Conklin, Superintendant of the Central Park Menagera, allowed to be transported to New York to consider the propriety of treatment. This was evidently useless. No matter how quiet the animal might have been kept, reduction was impossible, application of splints impracticable, the leg was swollen and sensitive, the external wound through which the bones protruded was discharging a thin sanious pus very offensive, which, attracting swarms of flies, added much to the animal's suffering, and in the presence of all these conditions it was decided to destroy him, and for that purpose he was led out of his cage, secured by chains, and four rifle balls discharged into that portion of his cranium situated behind the base of the ear.

The post mortem appearances of the bones of the leg were as follows: The ulna (the largest bone in the fore arm in the elephant) was fractured transversely across its lower third, about five inches above the articulation. The radius presented a comminuted fracture, also of its lower third, having been broken into several pieces. Several large abscesses were found around the seat of the fracture, and when opened were observed to communicate directly with the fractured end of the bones, which were considerably necrosed and rapidly undergoing disintegration. The large tendons passing over this portion of the leg were nearly all softened, and some were seen partially separated from their bony attachments.

EXPERIMENTAL PATHOLOGY.

ON THE TRANSMISSIBILITY OF TUBERCULOSIS THROUGH FOOD, AND UPON THE ATTENUATION OF THE PATHOGENIC ACTION OF THE BACILLI OF TUBERCULOSIS BY PUTREFACTION.

By FISHER.*

Fisher has experimented on rabbits which were kept isolated in cages, under the best hygienic conditions and which at the beginning of the experiments were in perfect health. They were

* Archiv für experimentelle Pathologie und Pharmac.

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fed with portions of fresh lung, obtained from other rabbits which had developed general tuberculosis, from their inoculation, a few weeks previous, with tuberculosis matter in the anterior chamber of the eye.

The pieces of lungs were cut into smaller fragments, and kept in distilled water or a solution of chloride of sodium and then crushed in a mortar. This crushed mass was filtered and the liquid obtained, containing a certain number of bacilli, was mixed with milk or water, which was given to the animals to drink.

A single dose of from 3 to 8 cubic centimetres of the mixture gave rise after six or eight weeks to the development of typical tuberculations of the mucous membrane of the mesenteric glands and of the liver. The spleen, kidneys, mesentery, peritoneum and pleura were in all cases found healthy. On the intestinal mucous membrane, ulcerations sometimes appeared, resembling very much those found in the intestines of phthisis patients.

In most of the animals there was a tuberculation of the sub-maxillary and cervical glands, though there were no ulcerations either upon the buccal or the pharyngeal membranes. Once, a single tubercular ulcer was found on one of the amygdals, with a tubercular eruption upon the tongue. Altogether these experiments give another proof of the transmissibility of tuberculosis through the food, and again they confirm those of Falk, upon the resistance which the bacillis of tuberculosis offers to digestive secretions.

Like Falk, Fisher has observed that where alimentary masses, infected with the Koch bacilli, have been previously exposed to putrefaction, the virulent activity is diminished if not destroyed.

Fisher also remarks that, in his experiments, he has always used young tubercles, free from spores, but containing tubercular bacilli only, and therefore that he cannot agree with Wesener, who says that in the digestive canal, the spores alone preserve their virulent activity, while the bacilli have none. He also objects to the theory that normal gastric juice destroys the bacilli of tuberculosis.

And again, from the fact that Wesener has produced tuberculosis in animals injected with the sputa of phthisis in the

intestines, it cannot be concluded that putrefaction diminishes the virulency of the bacilli, as the sputa of phthisis contains other pathogenic organisms, capable of stimulating the formation of inflammatory foci resembling more or less those of tuberculosis. —*Revue des Sciences Medicales.*

EXTRACTS FROM AGRICULTURAL PAPERS INTERESTING TO VETERINARIANS.

RED TAPE—DEALINGS WITH CONTAGIOUS DISEASES—"A MODERN INSTANCE."

To the Gazette :

On the 19th of August I wrote to the chief of the Bureau of Animal Industry calling his attention to the outbreak of pleuropneumonia at Quebec quarantine station, and suggested that immediate steps should be taken to prevent cattle that had been in that station with the infected cattle from being imported into the United States, and mentioning a lot of polled Angus cattle of Mr. Dye, of Miami Co., O., as probably in that category. To this letter Dr. Salmon answered August 25, saying that it was received during his absence, added, "we have taken steps to secure information in regard to the danger, if any, to be apprehended from the presence of pleuro-pneumonia in the Quebec quarantine station. My impression is that the disease was recognized immediately on the arrival of the infected herd and that no cattle have left the station since that time. I hope to have definite information in regard to this in a few days, and if there is any reason for quarantining any herds which have come through that station to the United States I will notify the proper State authorities at once in order that this may be done."

And now, on the 6th day of September, I have received from the Bureau of Animal Industry the following :

Hon. T. C. Jones, Chairman of the Ohio State Board of Live Stock Commissioners, Delaware, O. : I have received information from the Inspector of Stock for the Dominion of Canada that the infected cattle were admitted to quarantine on June 24,

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and that the herd belonged to Mr. C. R. C. Bye did not leave the quarantine station until July 26. These cattle were consequently in the quarantine station in the neighborhood of the infected cattle for over a month. I would, therefore, respectfully recommend that they be held under supervision until the expiration of ninety days from the time they were discharged from the Quebec quarantine station.

D. E. SALMON, Chief of Bureau.

There was another lot of Angus cattle belonging to Geary Bros., Canada, that came over in the same ship with those of Mr. Dye, and released from quarantine at the same time, and were advertised to be sold at the Ohio State Fair last week, which the officials at Washington seemed to have had no knowledge of; and although the permission given to sell these cattle on the Fair Grounds was withdrawn as soon as the managers learned of the outbreak at Quebec, the cattle were nevertheless shipped to Ohio the week before the fair. Fortunately we did not wait to be informed by the Washington officials, but had the cattle placed under official supervision as soon as they arrived, and ordered them to be kept in quarantine, isolated from all other stock, for a period of ninety days from the time they left the Quebec yards, so that there would not be the slightest danger of the infection spreading if an outbreak should occur amongst these cattle, which we regard as most improbable.

In the meantime I had written to the Commissioner of Agriculture, and to the Secretary of the Treasury, calling attention to the matter, and urging that the permission given by the Treasury Department to import cattle from Canada should be withdrawn, and to-day I have a letter from Acting Secretary Fairchild, stating "that the Secretary of State has been requested to investigate the matter, and to inform this (Treasury) Department at an early date, whether any contagious or infectious diseases prevail among the cattle in that country. Upon the receipt of such information the Department will communicate further with you upon the subject."

Now, it may be that all this circumlocution and consequent delay is necessary in the transaction of business at these departments, but I cannot understand why it should be.

The Secretary of the Treasury ought to be much better informed on the subject than the Secretary of State, because he has subordinates all along the Canadian border who could have informed him of the importation of the cattle from the Quebec quarantine.

The law of Congress prohibits the importation of cattle from British Provinces, but gives the Secretary of the Treasury the power to permit such importations, when in his opinion it will subserve the public interest, under such restrictions and limitations as he may prescribe. Some two or three years ago the Department issued an order allowing the free importation of such cattle without restriction, and if they were imported for breeding purposes, as they are generally claimed to be, they come in free of duty, while our cattle cannot be taken into Canada at all without a quarantine of ninety days after landing. Why did not the Treasury Department withdraw its permission immediately upon learning of the outbreak of pleuro-pneumonia at Quebec? If this had been done it would probably have saved us the trouble and expense of looking after the two lots above mentioned. It certainly would have detained the Geary cattle in Canada, for they were shipped only ten days ago.

T. C. JONES.

DEALING WITH HOG CHOLERA IN CONNECTICUT.

A disease made its appearance in a pen of 80 swine belonging to L. D. Rockwell, of Bloomfield, Conn., on August 8. Being called professionally to attend the affected animals, I found after making autopsies that the disease was hog cholera, otherwise known as "swine plague." On August 11 I reported such to be the case to the Commissioner of Contagious Diseases of Animals, and on August 14 the chairman, Hon. E. H. Hyde, of Stafford, visited the affected herd and placed them under strict quarantine. The Commissioners, including E. H. Hyde, of Stafford, and Dr. J. W. Alsop, of Middletown, again visited these swine, in company with myself, on August 18, and after making numerous autopsies on the cadavers of those which have recently died and on some that were killed for our benefit, they became satisfied as

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to the nature of the disease, and ordered the entire number to be appraised according to the law, then destroyed and buried, the premises thoroughly disinfected, and no other swine allowed on the premises for the period of three months. The law provides that when the Commissioners deem it necessary for the public good, they may order any animals afflicted with contagious diseases to be destroyed and paid for by the State, after being appraised at their actual value at time of appraisal, which is made by three disinterested parties.

It is supposed that these swine became infected by contagion conveyed by the medium of sheep brought from the west. Mr. Rockwell, who is a butcher, is constantly bringing sheep from the Western States, and it is at least probable that they are in this case the carriers of the contagion.—*J. E. Gardner, D. V.S., Connecticut Cattle Commission, in New England Homestead.*

SOCIETY MEETINGS.

ANNUAL MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The annual meeting of the United States Veterinary Medical Association was held at the Rossmore Hotel, September 21st, at 10 a. m. President Dr. L. McLean in the chair. Censors present, Drs. Miller, Dixon and Field. The chair appointed Drs. Dougherty and Harrison to act as censors. The only business coming before the comitia minora was examination of candidates for admission to membership. All applicants for admission to the Association were favorably recommended with one exception.

Upon roll call it was found that about forty members were present. The minutes of annual and semi-annual meetings were read and adopted.

Admission of members being next in order, the following gentlemen were declared members of the Association; W. S. Kooker, A. S. Leatherman, J. Faust, Wm. H. Lowe, Paul Paquin, Jas. W. Sallade, Wm. Miles, Theo. Birdsall, Ralph Ogle, J. H. Jacobus, E. R. Forbes, V. T. Atkinson, G. L. Warner, Alex. Marshall, E. Waters, F. J. Mustoe, E. B. Weber.

After admitting and welcoming newly elected members, Dr. Dougherty recommended for membership W. H. Martenet of Baltimore, Ind.; Dr. Coates proposed Jas. A. Walrath of N. Y., and Robt. C. Jones, Port. Jefferson, L. I.; Dr. Harrison proposed C. Saunders Breed. D. D. Lee, K. Winslow and E. C. Beckett, of Harvard University; Dr. Ross proposed Thos. Bland, of Conn., Dr. Pendry proposed Geo. G. Van Mater, of Brooklyn and W. E. Cuff, of New York; Secy. proposed Wm. Rose, of Staten Island, T. S. Butler, of Ohio, John Tempany, U. S. Calvary and Dr. Harris, of New York.

Election of officers for ensuing year resulted as follows: Pres., A. Liautard; Vice-Pres., Wm. Zuill; Treas. Jas. L. Robertson; Secy., Ch. B. Michener; Board of Censors, C. P. Lyman, R. S. Huidekoper, D. J. Dixon, L. McLean, S. S. Field, E. C. Ross, Fred. H. Osgood.

Dr. McLean, on retiring from the chair, regretted that individual members took so little interest in the welfare of the Association, and did so little to advance the profession. Dr. Liautard spoke briefly on assuming the chair. The Treasurer's report showed the funds of the Association amounted to about seven hundred dollars.

After considerable discussion and unnecessary personal remarks it was decided to accept the recommendation of the comitia minora, and allow the name of Dr. Bridge to come up before the semi-annual meeting in March.

The committee to secure uniform standard of examinations by the different colleges was continued. Diseases committee reported through its chairman Prof. Liautard. The report will appear in the columns of the REVIEW.

The committee appointed to secure better recognition for Army Veterinarians was also continued. The Association, by motion of Dr. Robertson, voted \$100.00 towards erecting a monument in honor of Henry Bouley. After a short intermission, the Secretary read two essays that had been presented to the Association for its prize.

One of these receiving a large majority of all votes cast, was awarded the prize. The essay was on the subject of Parturient Apoplexy, and was written by T. S. Butler, V.S., of Ohio.

It was decided in the future to grant this prize to any person writing the best paper on any subject relating to veterinary medicine; that such papers be printed in AMERICAN VETERINARY REVIEW and distributed to members of the Association and further that all communications competing for prizes be read at the regular, meeting of this society.

The committee on education and intelligence was empowered to spend not more than \$150.00 in the prosecution of its labors. After general discussion, the Association adjourned to the banquet room and spent a most pleasant evening. The semi-annual meeting in March, '87, will be called by order of Board of Censors in some of the Eastern States.

C. B. MICHENER, V.S., Sec'y.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The 4th semi-annual meeting took place at Columbus, Ohio, Sept. 1. Owing to the absence of the President, Dr. F. B. Coldon, the chair was occupied by Dr. W. R. Howe, of Dayton, who called the meeting to order with a few well applied remarks. About 20 members were present from different parts of the State. The minutes of the previous meeting being read and approved, several letters were read by the Secretary expressing the regrets of several members at being unable to be present and also letters from Professors Liautard of N. Y. and McEchran of Montreal, thanking the Association for the honor they had conferred upon them by making them honorary members.

The following gentlemen being vouched for by the Board of Censors, were then elected members, viz: E. R. Barnett, V.S., Akron, Ohio; T. E. Anderson,

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V.S., Carey, Ohio; I. S. Butler, V.S., Chillicothe, Ohio., graduate of the Ontario Veterinary College, and C. S. Elliott, D.V.S., of Greenville, Ohio; S. H. Kent, D.V.S., of Cadiz, Ohio, graduate of the American Veterinary College.

In the afternoon session, the chair called for a report from the committee on contagious diseases. Owing to the absence of their chairman no official report was made, but several members present took the liberty to state what cases had come under their observation since our last meeting. Dr. W. E. Wight, of Delaware, spoke of having met with one case of glanders since our last meeting. Dr. Hillock, of Columbus, reported cases of glanders that are in quarantine near the city. Dr. Smith, of Pleasant Hill, reported two cases of genuine glanders. Dr. Fair, of Cleveland, reported cases which had come under his observation since our last meeting. Dr. J. S. Butler reported cases and thought the law was a little defective in this particular, as it gives parties a beautiful chance to dispose of a horse even after he is informed that he suffers from glanders, before the proper authorities instruct him to either quarantine or destroy the animal.

The chair called for essays and papers, but none were forthcoming although two had been promised according to the Secretary's report, both parties having been notified in due time. Dr. Detmars, of Columbus, was to have read a paper on glanders, Dr. Yonkerman, of Cleveland, on medical jurisprudence. Both gentlemen were absent and no excuse or apology was sent to the Association for their absence. Several members were inclined to censure Drs. Detmars and Yonkerman for treating the Association in that manner. A motion was made and passed by a unanimous vote instructing the Corresponding Secretary to write both gentlemen expressing the Association's views on the subject. As the Association demands courtesy from each one of her members, it is altogether likely that some action will be taken at the annual meeting unless a satisfactory explanation is given by each gentleman for not being present to read his paper or writing an excuse. A suggestion was made by Dr. Smith that alternates be appointed in the future to read papers; that would always insure us of a sufficient number of essays. This suggestion was thought wise and will be adopted in the future.

The chair appointed a committee consisting of Drs. Newton, Butler and Fair, to draw up resolutions of respect to the memory of Dr. L. B. Chase, of Berlin, O., who had been removed by death since our last meeting. Dr. Fair spoke on the subject of castration and regretted very much that many of the graduates of veterinary colleges did not undertake the operation of castrating ridglings, an operation which is simple but thorough. They do not have sufficient confidence in themselves, having had no practical instruction. This work belongs to the veterinary surgeon and no graduate should in his opinion leave a college without being able to operate as well as the farmers who are traveling about the country operating. It is in his opinion a disgrace to the profession to have to turn over any part of surgery to farmers and humbugs who do not understand the anatomy of the parts at all. Still they operate instead of qualified veterinary surgeons. It is to be hoped in the future that the different demonstrators on surgery at the different veterinary colleges will make a bold effort to practically demonstrate to their class how to operate, and not be compelled to bring in farmers and butchers to instruct their classes. Dr. Newton followed by giving an excel-

lent description of the operation and how successful he had been, and how willing people were to pay well for the operation properly performed. Dr. Cotton related his experience after having castrated some eighty head with but few losses. The Dr. regards the operation as a simple one and recommends all qualified veterinary surgeons to make an effort. Dr. J. S. Butler spoke of his success and stated that he did not hesitate to operate, and thought that a great deal depends upon the after care of the patient for making a recovery. Dr. Devors, who has a famous reputation as a castrator, spoke of his system of casting and securing them before the operation, and in the majority of cases there was but little danger. A lengthy communication was read from McComb, Ohio, from one I. Strouse, exposing some shameful work done by traveling castrators. In one case he speaks of the operator removing the bladder and killing the horse; in other cases two out of three proved fatal, and still they warranted the animals.

Dr. James Hammill, of New York, was then introduced and spoke at some length on glanders and on the State law in New York regulating contagious diseases.

Dr. Stuart, of Cleveland, Ohio, was also introduced and spoke briefly on castration, and stated, although he was not a member of the Association, he believed that the Ohio Association outnumbered any other State Veterinary Association, and thought much good was derived by her work to the profession.

Some important business relating to unprofessional conduct and breach of ethics were then considered, resulting in some persons being expelled from the Association.

Dr. Newton then spoke of his mode of operation for hernia and the subject was fairly discussed by several members of the Association.

After much discussion it was decided to hold the annual meeting at Piqua on the second Tuesday in January, 1887. Dr. Butler promised to have there a number of interesting surgical cases to be operated by the members present at will—a kind of surgical tournament.

After adjournment a very complicated case of double champignon was exhibited by Dr. Hillark, who requested Dr. Fair to operate. Dr. F. having wisely declined on conservative surgical grounds, Dr. Howe operated. The operation was successful, but the patient died a short time after.

W. C. FAIR, Cor. Secretary.

PENNSYLVANIA STATE MEDICAL ASSOCIATION.

The semi-annual meeting of the Pennsylvania State Veterinary Medical Association was held in the Supreme Court room at Harrisburg, on Tuesday, September 7, 1886. At 11 A. M., in the absence of the President, the meeting was called to order by Dr. J. C. Michener, Vice-President. The Recording Secretary being absent, Dr. Chas. I. Goentner was appointed pro tem.

On roll call the following members were found to be present: Drs. T. R. Rayner, Chas. Schaufler, J. C. Fly, W. Horace Hoskins, W. L. Zuill, J. R. Hart, James B. Rayner, H. T. George, W. W. Custer, N. Rectenwald, J. C. Michener, M. J. Collins, T. S. Lippincott, R. S. Huidekoper, A. H. Lovette, J. W. B. Fretz and W. E. Reinhart.

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The minutes of the last meeting were read and adopted. Several reports were made for members unable to be present, after which a recess was taken.

The afternoon session was called to order by the President, Dr. J. W. Sallade.

Dr. Hoskins, by special permission, offered an amendment to the by-laws, *Resolved*, That any officer of this Association absenting himself from two consecutive meetings shall be subjected to a fine of five dollars.

Essays now being the order, Dr. R. S. Huidekoper, of Philadelphia, read an exhaustive treatise on glanders and farcy, offering it as an initiatory step toward securing a legislative act to cover these diseases, and giving the necessary power to veterinarians to destroy them when met with.

The next essay was one by Dr. J. Curtis Michener, of Colmar, on the subject of retroversion of the vagina and uterus. The subject was handled in a very suggestive and practical manner, and both essays were followed by discussion.

The Treasurer's report showed a balance of \$61.90 on hand.

On motion the meeting adjourned to meet in Philadelphia in March, 1887.

Reported for the REVIEW by

W. HORACE HOSKINS.

NEW JERSEY STATE VETERINARY SOCIETY.

The eighth regular meeting of the Veterinary Medical Association of New Jersey was held at Van Woert's Hotel, Long Branch, Thursday, August 12, 1886.

The President, Dr. Wm. B. E. Miller, of Camden, occupied the chair and called the meeting to order at 11 A. M., when the roll was called by the Secretary. Nineteen members answered to their names.

Mr. A. E. Vreeland, of Jersey City, a student at the American Veterinary College of New York, and John Kehoe, V.S., of Lyndhurst, an applicant for membership, were also present.

The Secretary read the minutes of the Morristown meeting, which were adopted as read.

The reports of the Secretary and Treasurer were presented and accepted.

Dr. Lowe read letters from Professor A. Liautard, of the American Veterinary College, Dr. E. M. Hunt, Secretary of the New Jersey State Board of Health, Dr. F. S. Billings and others, in which they expressed a sincere desire for the welfare of the Society and regretted not being able to be present.

The amendment to the by-laws, in relation to delinquent members, proposed by Dr. Miller at the Morristown meeting, was adopted. The names of eight members were stricken from the roll for non-payment of dues.

The Board of Censors met and examined John Kehoe, V.S., of Lyndhurst. The President of the Society called for their report, but the decision was withheld, the chairman of the Board stating that they were not prepared to report. The Board of Censors reconsidered the matter in the afternoon, when Mr. Kehoe was regularly admitted to membership.

The following gentlemen were proposed for membership:

T. S. Cole, of Millville, by Dr. Rogers; R. W. Carter, of Jobstown, by Dr.

Lowe; Ed. Chambon, of Jersey City, by Dr. Arrowsmith; W. A. McKintosh, of Morristown, by Dr. Durlan; R. E. Stamrood, of Freehold, by Dr. Sanford.

President Miller delivered an excellent address on veterinary legislation, showing how important it is that the Legislature should grant the profession still greater protection than has heretofore been accorded it by the act under which the Association is incorporated. A committee of five, with Drs. Miller and Lowe members ex-officio, was appointed to look after the interests of the Society at Trenton, and endeavor to bring about this much-desired object.

The members of the Society had a lengthy discussion over the practice now quite common with insurance companies of employing their own veterinarians to look after horses that are insured by them. This method was condemned and a resolution was adopted not to treat horses that are insured in these companies or to meet such veterinary surgeons in consultation.

The system of agricultural and other colleges having veterinary departments which are filled by but one professor graduating young men as veterinary surgeons, was generally condemned. It was the opinion of the members present that justice could not possibly be done to veterinary students at such colleges, and that it was an imposition upon the student, the profession and the public in general.

The next regular meeting will be held at Trenton in December.

WM. HEBBERT LOWE, D.V.S., Secretary.

AMERICAN SUBSCRIPTIONS TO THE MONUMENT TO H. BOULEY.

A. Liautard.....	\$20.00
J. C. Meyer, jr.....	5.00
Keystone Veterinary Association.....	20.00
United States Veterinary Medical Association.....	100.00
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CORRESPONDENCE.

ON THE USE OF IODINE VAPORIZATION.

ROYAL VETERINARY COLLEGE, EDINBURGH. }
AUGUST, 18th, 1886. }

The Editor of the "American Veterinary Review":

SIR.—I observe in the current issue of your journal some editorial remarks on the use of iodine in the treatment of glanders.

I have never administered this agent by intra-tracheal injection, nor should I have even dreamed of doing so, and taking into account its irritant properties I should consider such a proceeding

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unjustifiable, and, seeing that it can be so readily utilized and brought into contact with every part of the air-surface of the lungs by inhalation, unnecessary; indeed, I am of the opinion that owing to its great diffusive and penetrating properties it would permeate a large portion of the parenchymas, as well as the air tubes and cells of the lungs.

Like the authors in the report to which you draw attention, I have every reason for believing that glanders is never cured, and that in so-called cases of cure the visible local manifestations of the disease are alone overcome, while the deeper (lung especially) lesions remain, and that it is only a matter of time—the length being regulated by local circumstances—for the symptoms to again develop in the external surface with increased virulence. While saying this, however, I must also say, (and this is my main reason for writing this letter) that if there is one system more calculated than another to cure glanders it is *iodization by inhalation*, and a case which came under my observation last year strongly confirmed my faith in the curative value of iodine in such cases.

In September, 1885, I was requested to examine a pony in whose near fore leg a peculiar swelling had suddenly presented itself. On examination I found an inflammatory swelling having unusual characters involving the cutaneous cellular tissue around and above the anterior surface of the nose, and when examining this I observed a little adhesive discharge about the pony's nostrils and tumefaction of the sub-maxillary lymphatic glands; on directing the owner's attention to this he said, "Oh! yes, I know about that, he has had a bad cold, and has been in a certain veterinary establishment for some time, and discharged cured, or said to be cured."

I made a searching examination for confirmatory evidence of the suspicion which had crept into my mind that I had to deal with a case of glanders, but failed to discover any. I nevertheless took all necessary precautions and treated the case as one of nasal gleet—for the first week or two with mineral astringents and tonics—but the discharge becoming more copious I commenced the use of *iodine vaporization*—a system of treatment, I may observe, that I seldom or never find to fail in arresting un-

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complicated nasal gleet—with the result that in a short time the discharge ceased and the pituitary membrane assumed a more healthy condition, the enlarged glands also becoming softer and smaller. Not feeling satisfied with the progress of the case I requested Prof. McFadyean to inoculate a guinea pig with some of the nasal discharge, of which I gave him a supply. The result of the inoculation confirmed my suspicions, and the pony was slaughtered. The post mortem examination revealed pulmonary and systemic glanders lesions, but what was of more importance, I found several very extensive glanders cicatrices in the nasal membrane (high up in the cavities), but no recent ulceration, and no collection of pus; neither were there any bronchial lesions. Iodine vaporization should be more extensively used for such affections than it is, and also as a nasal and bronchial parasiticide, but glanders should be treated—*never*.

I am yours faithfully,

THOMAS WALLEY.

A CORRECTION.

DAYTON, Ohio, September 13th, 1886.

Editor Review:

I notice in the September number of the *REVIEW*, in Dr Fair's report of the Ohio State Veterinary Medical Association, the following sentence:

"Dr. J. C. Meyer, jr., read a very able paper on the different methods of casting horses, and showed some very good specimens of fractured vertebrae, the result of careless casting and confining of horses." Dr. Meyer did read a very good paper, and had taken the trouble to prepare and take to the meeting such specimens. He also had the moral courage to write up a case of a fatal accident (which any practitioner may have). Although I do not think any wrong was meant, I do think it very unjust for Dr. Fair or any other man to accuse Dr. Meyer of carelessness in casting horses when he had not seen the operation, neither was it the verdict of the members present.

WM. R. HOWE, V.S.

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POSITION WANTED.

GRANVILLE, Ohio, ——— 1886.

Dear Editor :

Wanted by a young veterinary surgeon, of good moral character, a position as assistant, or overseer of a breeding establishment.

J. T. JAMES,
P. O. Box 72.

PRACTICE OFFERED FOR SALE.

MARSHALL, Mo., ——— 1886.

Editor American Review :

DEAR SIR.—Please publish the following advertisement in your journal, and send me copy of same :

A veterinary business, worth \$3,000 per year, and growing, in county seat of best county in the State of Missouri, can be bought for half value (or less for cash), with office fixtures, instruments, buggy and harness, &c., &c. No competition; reason for selling, want to go east to engage in other business. Want to sell by 1st of October. Address :

T. A. EDWARDS,
Marshall, Saline County, Mo.

OBITUARY.

DR. CHASE.

COLUMBUS, Ohio, September 1st, 1886.

Resolutions passed by the Ohio State Veterinary Medical Association upon the death of our esteemed member Dr. CHASE, of Berlin, Ohio :

"Whereas, It has pleased Almighty God to remove from our midst our much esteemed member, Dr. L. B. Chase, of Berlin, Ohio, and

"Whereas, We feel his loss to our profession keenly, as he was a prominent member and one of our Board of Censors; therefore it is

"Resolved, That we tender our heartfelt sympathies to the widow and family of the deceased.

"*Resolved*, That we leave them in the hands of Providence, who only can give comfort in such times of affliction. It is also

"*Resolved*, That a copy of these resolutions be sent to the family, to the VETERINARY REVIEW, and be spread upon the minutes of the Association."

W. C. FAIR,
J. S. BUTLER,
J. V. NEWTON,

Committee.

NEWS AND SUNDRIES.

PASTEUR INSTITUTE.—The Paris *Conseil municipal* has ceded to the Society of the *Institute Pasteur* for ninety-nine years the ground upon which the institute is built. The following official statement has just been made: The whole number of persons treated by Pasteur is 1,656 (of these, 15 have died); 1,009 of these were French (3 of them died); 182, including 50 bitten by rabid wolves, were Russians (3 of these bitten by dogs, and 8 by wolves, have died); 20 were from Roumania, with 1 death; of the others, 59 were from England, 17 from Austria, 74 from Algeria, 18 from America, 2 from Brazil, 42 from Belgium, 58 from Spain, 7 from Greece, 8 from Holland, 25 from Hungary, 105 from Italy, 20 from Portugal, 2 from Turkey, and 2 from Switzerland (of all these, not one has as yet died; the total mortality, therefore, is less than one per cent.,—a most striking commentary upon the views of those who declare Pasteur's methods a failure).—*Science*.

INOCULATION OF HYDROPHOBIA.—With the virus taken from the spinal cord of a dog, which had died of hydrophobia in the Stockholm Veterinary Institute, three dogs were inoculated by Pasteur's method. To render it more certain, the meninges were chosen for the seat of operation. The dogs were carefully selected as being totally free from bites by other dogs which might have been suffering from rabies. The inoculation wounds healed after two days, and the dogs seemed quite healthy and lively. The sixteenth day after the operation two of them showed symptoms

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of rabies, and the third followed two days later. The first two dogs had fully developed rabies sixty days after the first symptoms had appeared. To save the third dog unnecessary suffering he was killed as soon as he developed decided symptoms of rabies.—*Lancet*.

PNEUMONIA AND HOG CHOLERA.—Hogs are suffering from pneumonia and hog cholera in the lower end of York County, Pa. Hundreds of them have died, almost every farmer for miles around having lost some of his stock—one farmer reports that he has lost 25 hogs by the disease. A number of cattle are suffering with bronchitis.

HOG CHOLERA has caused the death of hundreds of hogs in the north townships of Adams County, Ind. The larger farmers have lost nearly all their big lots by the disease. Some of the farmers lay the cause to the extreme drouth, while others say that the disease was caused by feeding unripe corn. The cholera has not appeared elsewhere in the county, but the loss is very heavy.

PASTEUR'S METHOD OF COMBATING RABIES.—Inoculation against rabies have, so to speak, obtained their right of citizenship in Vienna as well as in Paris, through Professor von Frisch and Dr. Ullmann. These gentlemen had betaken themselves to M. Pasteur's laboratory at Paris for a close study of the methods made use of by the latter investigator in his anti-rabic inoculations. First, Professor von Frisch made a communication on his own researches respecting this subject to the Imperial-Royal Society of Physicians, which was received with much applause by the audience, and the same was the case with the last communication before the same society, by Dr. Ullmann, an operator at Professor Albert's clinic. The latter remarked, in the course of his speech, that, in order to disprove the suggestion that rabies might possibly be produced by the preventive inoculations, he and four other physicians had inoculated themselves with the rabic virus derived from mad dogs, though they had not been bitten by such—without bad consequences. The injections caused no pain. On the first and second days he had felt somewhat weak, and, beginning with the sixth inoculation, he had noticed on himself an infiltration of a slight degree, with severe itching. He further

stated that he had brought with him from M. Pasteur's laboratory a rabbit of the one hundred and fourteenth remove (*passage*), which had been inoculated with rabic virus, and that, with M. Pasteur's consent, he was prepared to make preservative inoculations on persons who had been bitten by mad dogs, at Professor Albert's clinic. At the same meeting Professor von Frisch showed three rabbits which had been inoculated with parts of the spinal cord taken from rabid animals. He had already inoculated a large series of animals after Pasteur's method, and had always observed the same appearances: From eleven to fifteen days after the trephining and the injection of the rabic virus, the animals remained quite healthy; afterward they ceased to eat, and turned on their sides in the cage, presenting the appearance of general paralysis. On being touched with a stick, however, they were very sensitive and were immediately seized with cramps and contractures; four or five days later they died. At the post-mortem examinations he had never observed an abscess of the brain; the cerebral wound healed without any reaction. He had now received from M. Pasteur's laboratory a rabbit inoculated with the *virus fixe*, and announced that he would begin his researches concerning the attenuation of the virus.—*From N. Y. Medical Journal*.

AN OLD REMEDY AGAINST HYDROPHOBIA.—It has recently come to light that the State of New York, in 1806, paid to John M. Crous a thousand dollars for a remedy against hydrophobia which he considered infallible. The measure was advocated by DeWitt Clinton and Chancellor Kent. This remedy consisted of one ounce of the jaw-bone of a dog, burned and pulverized; the false tongue of a newly foaled colt, dried and pulverized; and "a scruple of verdigreas," raised on the surface of old copper by laying it in moist earth. The warrant of the Comptroller on which the money was paid, and the receipt of Crous, are on file with other State papers at Albany.—*Medical Record*.

SKEPTICISM ABOUT HYDROPHOBIA.—"We have been somewhat surprised," says the *Neurological Review*, "to notice the readiness with which so many condemn the method of M. Pasteur for arresting or preventing hydrophobia. Some have even gone so far as to intimate doubts as to the reality of any such disease. It

appears to me one to consent, the doubt will surprise to such a degree community established themselves, we have which M. Pasteur's method of preventing those who of the method his views

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appears to us, to say the least, curious how it is possible for any one to consider rabid animals, to witness the symptoms they present, the progress of the disease, and finally their death, and doubt whether it actually exists. It is to us almost as much of a surprise to find persons doubting whether there is, or may be, such a disease as hydrophobia in the human species, especially as communicated by the bites of rabid animals. If it is not well established that such a disease as rabies really exists, then, for ourselves, we hardly know what can be considered established. And we have been to a less degree surprised at the readiness with which M. Pasteur and his proposed method of arresting or preventing hydrophobia in man have been condemned, too often by those who have given but little attention either to the character of the man himself or upon course of experimentation upon which his views are based."—*New York Medical Journal*.

DISCOVERY OF THE PATHOGENIC ORGANISM OF THE SWINE-PLAGUE.—The extreme difficulties of reaching certainty in bacteriological researches must be apparent to anyone who has followed the record of its work in the past ten years. An excellent illustration is found in the study which has been made of the virus of hog-cholera (swine-plague, infectious pneumo-enteritis). Dr. D. E. Salmon gives some account of this in a recent issue of *The Sanitarian*. Hog-cholera costs this country some twenty-five millions of dollars yearly, and hence deserves attention from economists as well as men of science. It is an infectious disease spreading epidemically through herds. In 1876 Dr. E. Klein described a micrococcus which he found in the tissues of animals suffering from the disease. In 1878 he found, cultivated, and inoculated a bacillus, and thought it pathogenic. Lately, however, he has attributed the disease to a different bacillus occurring in the form of short rods. In 1880 Dr. Salmon found and cultivated a micrococcus which he believed, until lately, to be the essential virus of swine-plague. In 1883 M. Pasteur announced that the *rouget* of France, believed to be identical with our swine-plague, was caused by a dumb-bell-shaped microbion. This germ, he said, could be attenuated and made to act as a vaccine. We are told, however, by Dr. Salmon, that the

vaccine which Pasteur now sells for *rouget* contains a fine bacillus, which grows in cultures into filaments of considerable length. Inoculations with this vaccine, according to Dr. Salmon, do not cause a disease identical with our swine-plague.

Dr. Salmon states that he has at last found a microbe which seems to be very certainly the cause of swine-plague. The organism is rather a bacterium than bacillus; it is very irritant, and produces all the symptoms and lesions of the disease. It was found in the tissues of hogs in the early stage of the disease, and it is believed that previous errors have been due to the fact that in the late stages various septic and other organisms develop.—*Medical Record*.

FLACHERIE IN INSECTS.—Professor Forbes publishes in the Bulletin of the Illinois State Laboratory of Natural History, vol. ii, pp. 257-321, an account of the continuation of the interesting studies on the contagious diseases of insects begun by him in 1883. In this account he describes at length a common and highly destructive disease of the European cabbage-worm (*Pieris rapæ*). This disease he believes to be caused by a spherical micrococcus, of which he gives two excellent microphotographs. More complete and conclusive studies were made of a disease of the silkworm, which was apparently that known as jaundice. Of especial interest is the fact that he was able to produce this disease in cabbage-worms by moistening their food with culture-fluids containing the bacteria of this disease derived from silkworms. These experiments seem to us to be of the highest importance. If this or some other bacterium could be used against the cotton-worm, how much more effectual it might be than the poisons which are now used! These are liable to be washed away by the first rain, and will not multiply themselves. Professor Forbes also reports at length on a disease attacking two species of datana in his breeding-cages. This disease he is positive is the well-known *flacherie* of the silkworm.—*Science*.

A SENSATIONAL REPORT comes from Texas of the damage done by a recent hail-storm in Lincoln county, which, it is stated, killed 12,000 sheep, and also some cattle.

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